

ERRATUM TO “MINIMAL PERIODS OF HOLOMORPHIC MAPS ON COMPLEX TORI” [J. DIFFERENCE EQU. APPL. 18 (2012) 2059-2068]

JAUME LLIBRE AND FENG RONG

In [1] we studied the minimal periods of holomorphic maps on complex tori. In particular, we gave complete answers in dimensions one and two and outlined an algorithm for higher dimensions. However, due to two simple calculation mistakes in the proof of [1, Theorem 4], there were two subcases omitted in its statement.

On [1, pg. 2064], in the case $p = 2$ and $q = 1$, we should have $(\alpha_1, \beta_1) = (\alpha_2, \beta_2) = (\frac{1}{2}, \pm \frac{\sqrt{3}}{2})$. Then $N(f^m)$ is periodic as $\{1, 9, 16, 9, 1, 0, \dots\}$. Thus $\text{HPer}(f) = \{1, 2, 3\}$, which belongs to case (F4).

On [1, pg. 2065], in the case $p = -2$ and $q = 1$, we should have $(\alpha_1, \beta_1) = (\alpha_2, \beta_2) = (-\frac{1}{2}, \pm \frac{\sqrt{3}}{2})$. Then $N(f^m) = 9$ for all $m \geq 1$. Thus $\text{HPer}(f) = \{1\}$, which belongs to case (F1).

Therefore, the correct statement for minimal periods of holomorphic maps on two-dimensional complex tori should be as follows.

Theorem 1. *Let $f : \mathbb{T}^2 \rightarrow \mathbb{T}^2$ be a holomorphic map, and let $\lambda_1, \bar{\lambda}_1, \lambda_2$ and $\bar{\lambda}_2$ be the eigenvalues of A_f . Then $\text{Per}(f)$ is equal to*

- (E) \emptyset if and only if $1 \in \{\lambda_1, \lambda_2\}$;
- (F1) $\{1\}$ if and only if $\{\lambda_1, \lambda_2\}$ is either $\{0\}$, or $\{-1\}$, or $\{e^{i2\pi/3}\}$, or $\{-1, 0\}$, or $\{0, e^{i2\pi/3}\}$, or $\{e^{i4\pi/5}, e^{i2\pi/5}\}$, or $\{-1, e^{i\pi/2}\}$, or $\{-1, e^{i2\pi/3}\}$;
- (F2) $\{1, 2\}$ if and only if $\{\lambda_1, \lambda_2\}$ is either $\{e^{i\pi/2}\}$, or $\{0, e^{i\pi/2}\}$, or $\{e^{i2\pi/3}, e^{i\pi/2}\}$;
- (F3) $\{1, 3\}$ if and only if $\{\lambda_1, \lambda_2\} = \{-1, e^{i\pi/3}\}$;
- (F4) $\{1, 2, 3\}$ if and only if $\{\lambda_1, \lambda_2\}$ is either $\{e^{i\pi/3}\}$, or $\{0, e^{i\pi/3}\}$, or $\{e^{i\pi/2}, e^{i\pi/3}\}$, or $\{e^{i\pi/3}, e^{i2\pi/3}\}$;
- (F5) $\{1, 2, 4\}$ if and only if $\{\lambda_1, \lambda_2\} = \{e^{i\pi/4}, e^{i3\pi/4}\}$;
- (F6) $\{1, 2, 5\}$ if and only if $\{\lambda_1, \lambda_2\} = \{e^{i\pi/5}, e^{i3\pi/5}\}$;
- (F7) $\{1, 2, 3, 6\}$ if and only if $\{\lambda_1, \lambda_2\} = \{e^{i\pi/6}, e^{i5\pi/6}\}$;
- (G) infinite otherwise.

REFERENCES

- [1] J. Llibre, F. Rong; *Minimal periods of holomorphic maps on complex tori*, J. Difference Equ. Appl. **18** (2012), 2059-2068.

DEPARTAMENT DE MATEMÀTIQUES, UNIVERSITAT AUTÒNOMA DE BARCELONA, 08193
BELLATERRA, BARCELONA, CATALONIA, SPAIN
E-mail address: jllibre@mat.uab.cat

DEPARTMENT OF MATHEMATICS, SHANGHAI JIAO TONG UNIVERSITY, 800 DONG CHUAN
ROAD, SHANGHAI, 200240, P.R. CHINA
E-mail address: frong@sjtu.edu.cn